

## Further Researches for the Control of KHVD in Japan

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In the fall of 2003, the first outbreak of Koi Herpes Viral disease occurred in Lake Kasumigaura in Japan, and the disease spread rapidly over the country. The disease has caused massive mortality in both cultured and wild carp. As the water temperature has decreased in winter months, the disease seems to have been suppressed now, but people fear that the disease will reappear in this coming spring through summer. Prevention of KHV outbreak in cultured carp and control of the disease in wild waters are strongly required.

To achieve these goals, Fisheries Research Agency is planning a research project in collaboration with both academic and private sectors. There are three major areas of research or development in the project. In the first area, the basic pathogenesis of the disease and molecular genetics of KHV will be studied. Since the mechanisms or steps whereby KHV brings about disease in carp are largely unknown, these will be studied using histopathological techniques.

Epizootiological study including molecular genetics of the virus will also be conducted, so that the spreading route of the

disease in Japan will be clarified, at least partly.

Second, new diagnosis or detection methods for KHV will be developed. Currently, diagnosis of the disease is exclusively carried out by PCR. However, this method requires a thermal cycler, and there is a concern that the present PCR methods for KHV may not be sensitive enough to detect the virus at the latent stage of the disease. On the other hand, PCR has a possibility of yielding false positive results by contamination of a minute amount of viral genes. Hence, techniques with which we can overcome these problems will be developed, as well as improvement of the present PCR techniques.

Third, preventive measures for KHV should be developed. Susceptibility of KHV to various chemicals and physical treatments will be tested to develop effective methods of disinfection of fish farming equipment and rearing water. Development of inactivated vaccine and effective vaccination techniques will also be tried. Furthermore, a procedure will be developed to cure the diseased fish by raising water temperature.